ABQ03

CALCULATION COVER SHEET

WESTON
MANAGERS DESIGNERS/CONSULTANTS

Project:	INEEL V-Tank Remediation Project			Number of Sheets: 1 of 172
Site:	Test Area North, Idaho Falls, Idaho.			
Calculation Number:	ABQ03-HP003	Work Order Number:	12393.002.001.0045	
Subject:	**Chemical characterization of V-Tank and sand filter waste for purposes of making a preliminary hazardous waste determination with respect to 40 CFR 761 and 40 CFR § 262.11.**			

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RAA	5-15-01	60% Design	Carla Rellergert	Berg Keshian	
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RAE	10/22/01	Draft Final Polish	Susan Collins	Betty Humphrey	Dan Brennecke for D. Brennecke 10/31/01

Problem Statement:

Utilizing provided characterization data from references, determine the applicable hazardous waste codes and PCB concentration for the V-Tank and sand filter waste ensuring compliance with applicable RCRA and TSCA regulations. Compare known constituent concentrations from each V-Tank and the sand filter with applicable regulatory requirements and applicable treatment standards.

Method of Solution:

A review of existing chemical data for each phase of each V-Tank and the sand filter was performed and highest constituent concentrations were input into Excel 2000 tables. Applicable regulatory limits as well as wastewater and non-wastewater LDR treatment standards were also entered into these tables. Note these tables are attached as referenced herein.

Assumptions:

1. The contents of each tank will eventually be separated into liquid and sludge/solid phases and each phase will be managed separately based on highest constituent concentrations present in that phase of the waste.
2. Dilution of the tank waste will not occur during phase separation.
3. This review does not evaluate the V-Tank and sand filter waste for compliance with DOT, and this evaluation does not include a review of the radiological constituents present or activity of the V-Tank waste and sand filter.
4. With regards to the characterization data, when constituents were not detected and the detection limit was below either the regulatory limit or the applicable LDR treatment standard, it was assumed that the constituent was not present in the waste and was not evaluated for purposes of compliance with RCRA or TSCA requirements.
5. With regards to the characterization data, the highest reported concentration for the waste reviewed was included in the Excel tables for comparison against regulatory limits as well as LDR treatment standards.
6. With regards to the characterization data, it was assumed that P-listed and U-listed discarded commercial chemical products or chemical intermediates, and K-listed waste associated with specific industrial processes, do not apply to the V-Tank waste.
7. With regards to the chemical characterization data, it was assumed that only those constituents analyzed are considered contaminants of concern for this waste.
8. With regards to the chemical characterization data, when a constituent was not detected and the detection limit exceeded either the regulatory limit or the LDR treatment standard limit, it was assumed that those constituents are present at the detection limit value (if no additional sampling and analysis is performed on the waste prior to treatment).
9. With regards to the chemical characterization data, it was assumed that the only F-listed constituent present in the waste is Trichloroethene only, based on previous comments and on historical information.
10. With regards to the chemical characterization data, all reported analytical results were representative of each phase of V-Tank waste and sand filter.

Sources of Formulas and References:

1. Maximum Theoretical Leachate Concentration (mg/L) using reported total concentration data (mg/kg) divided by 20 for inorganic analysis and TCLP organics. Reference: RCRA Regulations and Keyword Index, 2000 Edition, Chapter 19, "Regulatory Questions and Answers From the RCRA Hotline, RCRA Question-309, Use of Total Waste Analysis in Toxicity Characteristic Determinations".

2. Wastewater definition: Wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS). Reference: RCRA Regulations and Keyword Index, 2000 Edition, Chapter 8, "40 CFR Part 268: Land Disposal Restrictions", specifically, 40 CFR 268.2 (f).

Characterization Data From:

Comprehensive Remedial Investigation/Feasibility Study (RI/FS) *for Test Area North Operable Unit 1-10 at INEEL,* DOE/ID-10557, November 1997, Dept. of Energy/Idaho Operations Office, Idaho Falls, ID.

Regulatory Requirements From:

RCRA Regulations and Keyword Index, 2000 Edition, Chapter 2, "40 CFR Part 261: Identification and Listing of Hazardous Waste" and Chapter 8, "40 CFR Part 268: Land Disposal Restrictions".

40 CFR 761 – July 2000, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, and Distribution in Commerce and Use Prohibitions, *Code of Federal Regulations,* Office of the Federal Register.

June 29, 1998 *Federal Register* (Vol. 63 FR 35384), 40 CFR Parts 750 and 761, Disposal of Polychlorinated Biphenyls (PCBs); Final Rule

Calculation:

Refer to (Attachment 1) Excel tables labeled "INEEL V-Tank Number VOC (or SVOC, Inorganic, Miscellaneous or PCB) Analysis on either Solid or Liquid Phase."

Discussion:

Ultimately, the management and eventual treatment and disposal of waste associated with the removal of the V-Tanks and concrete sand filter, will be based on the characterization of the V-Tank waste and sand filter. A preliminary chemical characterization of the V-Tank waste was performed based on the separation of waste phases. A summary of the results are reported below:

Tank/ Waste Phase	Applicable Chemical Characterization
V-1 (Liquid)	Trichloroethene as F001 and Hexachlorobenzene and Hexachlorobutadiene as D-codes. VOCs, SVOCs and inorganics as an Underlying Hazardous Constituents (UHCs). Mercury as a D009.
V-1 (Solid)	Trichloroethene as F001, and Tetrachloroethane, Hexachlorobenzene, Hexachlorobutadiene, Nitrobenzene, and 2,4,6-Trichlorophenol as a D-code SVOCs and inorgancis as Underlying Hazardous Constituents (UHCs). PCBs > 50 ppm present.
V-2 (Liquid)	Trichloroethene as F001 and 2,4-Dinitrotoluene, Hexachlorobenzene,and Hexachlorobutadiene as D-codes. SVOCs as UHCs.
V-2 (Solid)	Trichloroethene as F001and Tetrachloroethane, Vinyl chloride, 2,4-Dinitrotoluene, Hexachloroethane, Pentachlorophenol and Pyridine as D-codes. Chloroethane, inorganics and SVOCs as Underlying Hazardous Constituents (UHCs). Cadmium as D006. PCBs > 50 ppm present.
V-3 (Liquid)	Trichloroethene as F001 and2,4-Dinitrotoluene, Hexachlorobenzene, and Hexachlorobutadiene as D-codes. Chloromethane and SVOCS as UHCs..
V-3 (Solid)	Trichloroethene as F001, and Hexachloroethane, 2,4-Dinitrotoluene, Pyridine and Vinyl chloride as D-code. VOCs, SVOC and inorganic as UHCs. PCBs > 50 ppm present.
V-9 (Liquid)	Trichloroethene, as F001. Benzene, Chloroform, 1,2-Dichloroethane, 1,1-Dichloroethene, and Tetrachloroethene as D-codes. SVOCs and VOCs as UHCs. Cadmium as D006 and mercury as D009.
V-9 (Solid)	Trichloroethene as F001and Tetrachloroethane, 1,1,1-Trichloroethane and 1,2-Dichlorobenzene as either a D-codes or as Underlying Hazardous Constituents (UHCs). Benzene as D018, Chloroform as D022, 1,2-Dichloroethane as D028, 1,1-Dichloroethene as D029, and Pyridine as D038. D006-Cadmium, D007-Chromium, D008-Lead, D009-Mercury, and D011-Silver. Additional UHCs. PCBs > 50 ppm present.
Sand Filter (Solid)	Trichloroethene as F001. Cadmium as Underlying Hazardous Constituent. PCBs > 50 ppm present.

Several VOC and SVOC constituents were not detected in the waste, however detection limits exceeded either regulatory limits and/or applicable LDR treatment standards. In this case, these constituents could not conclusively be eliminated as not being present in the waste. Therefore, this characterization has assumed these constituents to be present in the waste at the detection limit value or concentration. A majority of these constituents have been identified as underlying hazardous constituents (UHCs). In addition, several constituents were rejected as a result of data validation and determined unusable.

It is recognized that some organics have densities greater than water and that when the sludges are pumped, some of the organics may be disbursed or dissolved into the water phase. Treatment systems have been designed with a safety factor to account for this effect. Sampling of liquids will occur after the liquid treatment, since the treatment system is designed for worst-case scenario from Tank V-9.

Summary of Results:

The existing analytical data associated with the waste from each tank and sand filter was reviewed and a preliminary hazardous waste determination was developed. The basis behind this determination is based on the separation of liquid phased from the sludge or solid phase of the waste. This approach is consistent with an alternative method of managing multi-phasic wastes developed by EPA and described in the preamble language of the June 29, 1998 FR, specifically 63 FR 35388, in that "If the waste is separated into phases, each phase may be disposed of according to the disposal requirements applicable to that phase." This is based on compliance with the anti-dilution provision at 40 CFR 761.1(b)(5).

This approach is also consistent with Option 3 for containerizing V-Tank and sand filter waste for compliance with applicable DOT packaging requirements and classification with respect to 10 CFR §61.55 calculations presented in calculation ABQ02-HP002. Consistent with this option, separation of the waste phases may allow the liquid phase from Tanks V-1, V-2, and V-3 to be shipped at once assuming all waste acceptance criteria are met.

Conclusions and Recommendations:

1. Separate the multiphasic V-Tank waste and manage each phase separately.
2. Determine TCLP mercury concentration for V-9 solid phase in order to effectively determine if the waste should be managed as a high mercury organic waste.

Computer Source:

Compaq DeskPro with Microsoft Windows NT operating system and Office 2000 software.

Preliminary Summary of Chemical Characterization Data Associated with TSF-09 and TSF-18 Tanks

Tank Number	Waste Phase	VOC Analysis	SVOC Analysis	Inorganic Analysis	LDR Treatability Group	PCBs	Specified Method of Treatment
V-1	Liquid	F001 (Trichloroethene) Two UHCs	56 UHCs D032 (Hexachloro-benzene) D033 (Hexachloro-butadiene)	D009 (Mercury) UHCs (Antimony & Lead)	Wastewater	U (0.1 mg/L)	
V-1	Sludge	F001 (Trichloroethene) D039 (Tetrachloroethene)	55 UHCs D032 (Hexachloro-benzene) D033 (Hexachloro-butadiene) D036 (Nitrobenzene) D042 (2,4,6-Trichloro-phenol)	UHCs (Antimony, Beryllium, Cadmium, & Nickel)	Non-wastewater	660 mg/kg	Incineration is required for PCBs
V-2	Liquid	F001 (Trichloroethene) One UHC	D030 (2,4-Dinitrotoluene) D032 (Hexachloro-benzene) D033 (Hexachloro-butadiene)	None	Wastewater	U (0.1 mg/L)	
V-2	Sludge	F001 (Trichloroethene) D039 (Tetrachloroethene)	56 UHCs D030 (2,4-Dinitrotoluene) D034 (Hexachloro-ethane) D037 (Pentachloro-phenol) D038 (Pyridine)	D006 (Cadmium) UHCs (Antimony, Chromium, & Nickel)	Non-wastewater	260 mg/kg	Incineration or a high efficiency boiler or disposal in an approved landfill is required for PCBs.
V-3	Liquid	F001 (Trichloroethene) One UHC	D030 (2,4-Dinitrotoluene) D032 (Hexachloro-benzene) D033 (Hexachloro-butadiene)	None	Wastewater	U (0.1 mg/L)	
V-3	Sludge	F001 (Trichloroethene) D039 (Tetrachloroethene) D043 (Vinyl Chloride)	51 UHCs D030 (2,4-Dinitrotoluene) D034 (Hexachloro-ethane) D038 (Pyridine)	UHCs (Antimony, Cadmium, Chromium & Nickel)	Non-wastewater	400 mg/kg	Incineration or a high efficiency boiler or disposal in an approved landfill is required for PCBs.

Tank Number	Waste Phase	VOC Analysis	SVOC Analysis	Inorganic Analysis	LDR Treatability Group	PCBs	Specified Method of Treatment
V-9	Liquid	F001 (Trichloroethene) D018 (Benzene), D022 (Chloroform), D028 (1,2-Dichloroethane), D029 (Dichloroethene), D039 (Tetrachloroethene) 23 UHCs	Six as UHCs	D006 (Cadmium) D009 (Mercury) UHCs (Lead & Nickel)	Wastewater	0.036 mg/L	
V-9	Sludge	F001 (Trichloroethene) D018 (Benzene), D022 (Chloroform), D028 (1,2-Dichloroethane), D029 (Dichloroethene), D039 (Tetrachloroethene) 21 UHCs	60 as UHCs D038 (Pyridine)	D006 (Cadmium) D007 (Chromium) D008 (Lead) D009 (Mercury) D011 (Silver) UHCs (Barium, Beryllium, Nickel & Thallium)	Non-wastewater	310 mg/kg	Incineration or high efficiency boiler or disposal in an approved landfill is required for PCBs. For mercury, if it is determined to be High Mercury Subcategory, Retorting or Roasting capable of recovering the mercury is required.
Sand Filter	Solid	F001 (Trichloroethene)		UHC (Cadmium)	Non-wastewater	290 mg/kg	Incineration or a high efficiency boiler or disposal in an approved landfill is required for PCBs.

ATTACHMENT 1 – INEEL OU 1-10 SITE TSF 09 AND 18, TANK V-1, V-2, V-3, V-9 AND SAND FILTER CHEMICAL CHARACTERIZATION SUMMARIES

INEEL OU 1-10 Site TSF-09, Tank V-1
Preliminary Liquid Phase Chemical Characterization Summary

- The liquid phase of the waste associated with this tank is considered a wastewater for purposes of complying with the Land Disposal Restrictions, in that it contains <1% TOC and <1% TSS. This determination as well as the hazardous waste determination listed below is preliminary based on existing analytical data.

- **Hazardous Waste Determination:** Highest concentrations detected in the waste are reported.

The RCRA Waste codes that apply to this waste are as follows:

Constituent	Concentration Detected in Waste (mg/L)	Regulatory Limit (mg/L)	Applicable Waste Code	LDR Treatment Standard for wastewater (mg/L)
Antimony	1.9 (assumed)	1.9	UHC	1.9
Lead	0.84 J	0.69	UHC	0.69
Mercury	0.369	0.2	D009	0.15
Chloromethane	0.19 (assumed)	0.19	UHC	0.19
Hexachloro-benzene	ND @ 1	0.13	D032	0.055
Hexachloro-butadiene	ND @ 1	0.5	D033	0.055
Tetrachloroethene	0.14 J	0.7 mg/ L as a D039, None if F-listed, (0.056 as a UHC)	UHC	0.056
Trichloroethene	0.16 J	0.5 mg/L as D040, None if F-listed, or 0.054 as a UHC	F001	0.054

Note: SVOCs are also identified to be present as UHCs. See write-up below.

- UHC = Underlying Hazardous Constituent
  J = Estimated Value
  ND = Not Detected

- Based on a review of the inorganic analysis, antimony is the only constituent in which, the data was rejected during data validation, and determined to be unusable. Therefore, conservatively, antimony is identified to be present at the treatment standard limit and is identified as an underlying hazardous constituent.

- Based on a review of the volatile organic analysis, chloromethane is the only constituent in which, the data was rejected during data validation, and determined to be unusable. Therefore, conservatively, chloromethane is identified to be present at the treatment standard limit and is identified as an underlying hazardous constituent.
- The detection limits for a majority of the SVOCs were above the wastewater treatment standards, as well as the characteristic limits for several constituents. LDR guidance suggests that in cases where detection limits are above either the characteristic limit or treatment standards, the generator may use his knowledge of the waste, in lieu of analytical results, to certify that these constituents are not present in the waste. However, since this waste will not be re-analyzed for these constituents, the following SVOCs are also assumed to be present in the waste at the detection limit value (see attached tables for concentrations) and are identified as underlying hazardous constituents (The table above identifies only those SVOCs with detection limits exceeding the characteristic limit): Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,I)perylene, Benzo(k)fluoranthene, Butylbenzylphthalate, Bis (2-chloroethoxy) methane, Bis (2-chloroethyl) ether, Bis (2-chloroisopropyl) ether, 4-Bromophenyl-phenylether, Chrysene, 4-Chloroaniline, 4-Chloro-3-Methylphenol, 2-Chloronaphthalene, 2-Chlorophenol, Dibenz(a,h)anthracene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 3,3-Dichlorobenzidine, 2,4-Dichlorophenol, Diethylphthalate, 2,4-Dimethylphthalate, Dimethylphthalate, Di-n-butylphthalate, Di-n-octylphthalate, 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Fluoranthene, Fluorene, , Hexachlorocyclopentadiene, Hexachloroethane, Indeno(1,2,3-cd)pyrene, 2-Methylphenol, 4-Methylphenol, Napthalene, 2-Nitroaniline, 3-Nitroaniline, 4-Nitroaniline, Nitrobenzene, 2-Nitrophenol, 4-Nitrophenol, N-nitroso-di-n-propylamine, N-nitrosodiphenylamine, Pentachlorophenol, Phenanthrene, Phenol, Pyrene, Pyridine, 1,2,4-Trichlorobenzene, 2,4,5-Trichlorophenol, and 2,4,6-Trichlorophenol.

- Based on a review of the analytical data provided by INEEL, this waste is considered both characteristic with underlying hazardous constituents, and a listed hazardous waste, which must be treated to meet the land disposal restrictions.

- **Recommendation:**

  If this waste will not be treated on-site, the waste acceptance criteria of possible off-site treatment facilities should also be considered.

INEEL V-1 VOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Acetone	U (0.011)	Treatment standard limit if UHC	UHC	0.28	160	
Benzene	U (0.01) J	0.5 mg/l (D018) or treatment standard limit if UHC	D018 or UHC	0.14	10	
Bromodichloromethane	U (0.01) J	Treatment standard limit if UHC	UHC	0.35	15	
Bromoform (Tribromomethane)	U (0.01) J	Treatment standard limit if UHC	UHC	0.63	15	
Bromomethane	U (0.01) J	Treatment standard limit if UHC	UHC	0.11	15	
2-Butanone (MEK)	U (0.01) J	200 mg/l (D035) or treatment standard limit if UHC	D035 or UHC	0.28	36	
Carbon disulfide	U (0.01) J	Treatment standard limit if UHC	UHC	3.8	4.8 mg/l	
Carbon tetrachloride	U (0.01) J	Treatment standard limit if UHC	UHC	0.057	6	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
R = Result rejected during validation and unusable.

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INEEL V-1 VOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Chlorobenzene	U (0.01) J	100 mg/l (D021) or Treatment standard limit if UHC	D021 or UHC	0.057	6	
Chloroethane	U (0.01) J	Treatment standard limit if UHC	UHC	0.27	6	
Chloroform	U (0.01) J	6 mg/l (D022) or treatment standard limit if UHC	D022 or UHC	0.046	6	
Chloromethane	**0.01 R**	**Treatment standard limit if UHC**	**UHC**	**0.19**	**30**	**Since this value was rejected, it will have to be re-analyzed to determine concentration in the waste.**
Dibromochloromethane (Chlorodibromomethane)	U (0.01) J	Treatment standard limit if UHC	UHC	0.057	15	
1,1-Dichloroethane	U (0.01) J	Treatment standard limit if UHC	UHC	0.059	6	
1,2-Dichloroethane	U (0.01) J	0.5 mg/l (D028), or treatment standard limit if UHC	D028 or UHC	0.21	6	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
R = Result rejected during validation and unusable.

INEEL V-1 VOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
1,1-Dichloroethene	U (0.01) J	0.7 mg/l (D029) or treatment standard limit if UHC	D029 or UHC	0.025	6	
1,2-Dichloroethene (total)	0.058 J	None	NA	NA	NA	
1,2-Dichloropropane	U (0.01) J	Treatment standard limit if UHC	UHC	0.85	18	
cis-1,3-Dichloropropene	U (0.01) J	Treatment standard limit if UHC	UHC	0.036	18	
trans-1,3-Dichloropropene	U (0.01) J	Treatment standard limit if UHC	UHC	0.036	18	
Ethylbenzene	U (0.01) J	Treatment standard limit if UHC	UHC	0.057	10	
2-Hexanone (Methyl n-butyl ketone)	U (0.01) J	NA	NA	NA	NA	
4-Methyl-2-pentanone (MIK)	U (0.01) J	Treatment standard limit if UHC	UHC	0.14	33	
Methylene chloride	U (0.01) J	Treatment standard limit if UHC	UHC	0.089	30	
Styrene	U (0.01) J	NA	NA	NA	NA	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
R = Result rejected during validation and unusable.

INEEL V-1 VOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
1,1,2,2-Tetrachloroethane	U (0.01) J	Treatment standard limit if UHC	UHC	0.057	6	
Tetrachloroethene	**0.14 J**	**0.7 mg/l (D039) or treatment standard limit if UHC**	**D039 or UHC**	**0.056**	**6**	**The concentration 0.14 mg/L is below the characteristic limit, however it exceeds the wastewater treatment standard.**
Toluene	U (0.01) J	Treatment standard limit if UHC	UHC	0.08	10	
1,1,1-Trichloroethane	U (0.01) J	Treatment standard limit if UHC	UHC	0.054	6	
1,1,2-Trichloroethane	U (0.01) J	Treatment standard limit if UHC	UHC	0.054	6	
Trichloroethene	**0.16 J**	**None if listed**	**F001**	**0.054**	**6**	**The concentration 0.16 mg/L is below the characteristic limit, however it exceeds the wastewater treatment standard.**
Vinyl chloride	U (0.01) J	0.2 mg/l (D043), orTreatment standard limit if UHC	D043 or UHC	0.27	6	
Xylene (ortho)	U (0.01) J	NA	NA	NA	NA	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
R = Result rejected during validation and unusable.

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INEEL V-1 VOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Xylene (total meta and para)	U (0.01) J	Treatment standard limit if UHC	UHC	0.32	30	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
R = Result rejected during validation and unusable.

INEEL V-1 SVOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Acenaphthene	U (1)	UHC Treatment Standard	UHC	0.059	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Acenaphthylene	U (1)	UHC Treatment Standard	UHC	0.059	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Anthracene	U (1)	UHC Treatment Standard	UHC	0.059	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Benzo (a) anthracene	U (1)	UHC Treatment Standard	UHC	0.059	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Benzo (a) pyrene	U (1)	UHC Treatment Standard	UHC	0.061	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Benzo (b) fluoranthene	U (1)	UHC Treatment Standard	UHC	0.11	6.8	1 mg/L detection limit exceeds the wastewater treatment standard.
Benzo (g,h,I) perylene	U (1)	UHC Treatment Standard	UHC	0.0055	1.8	1 mg/L detection limit exceeds the wastewater treatment standard.
Benzo (k) fluoranthene	U (1)	UHC Treatment Standard	UHC	0.11	6.8	1 mg/L detection limit exceeds the wastewater treatment standard.
Benzoic acid	U (5)	None	NA	NA	NA	
Benzyl alcohol	U (1)	None	NA	NA	NA	
Butylbenzylphthalate	U (1)	UHC Treatment Standard	UHC	0.017	28	1 mg/L detection limit exceeds the wastewater treatment standard.
Bis (2-chloroethoxy)methane	U (1)	UHC Treatment Standard	UHC	0.036	7.2	1 mg/L detection limit exceeds the wastewater treatment standard.
Bis (2-chloroethyl)ether	U (1)	UHC Treatment Standard	UHC	0.033	6	1 mg/L detection limit exceeds the wastewater treatment standard.
Bis (2-chloroisopropyl) ether	U (1)	UHC Treatment Standard	UHC	0.055	7.2	1 mg/L detection limit exceeds the wastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value

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INEEL V-1 SVOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Bis (2-ethylhexyl) phthalate	0.083 J	UHC Treatment Standard	UHC	0.28	28	Concentration is below both treatment standards, therefore it is not a UHC.
4-Bromophenyl-phenylether	U (1)	UHC Treatment Standard	UHC	0.055	15	1 mg/L detection limit exceeds the wastewater treatment standard.
Butylbenzylphthalate	U (1)	None	NA	NA	NA	
Carbozole (or Carbazole)	U (1)	None	NA	NA	NA	
Chrysene	U (1)	UHC Treatment Standard	UHC	0.059	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
4-Chloroaniline (p-chloroaniline)	U (1)	UHC Treatment Standard	UHC	0.46	16	1 mg/L detection limit exceeds the wastewater treatment standard.
4-Chloro-3-Methylphenol (p-chloro-m-cresol)	U (1)	UHC Treatment Standard	UHC	0.018	14	1 mg/L detection limit exceeds the wastewater treatment standard.
2-Chloronaphthalene	U (1)	UHC Treatment Standard	UHC	0.055	5.6	1 mg/L detection limit exceeds the wastewater treatment standard.
4-Chlorophenyl-phenylether	U (1)	None	NA	NA	NA	
2-Chlorophenol	U (1)	UHC Treatment Standard	UHC	0.044	5.7	1 mg/L detection limit exceeds the wastewater treatment standard.
Dibenz(a,h)anthracene	U (1)	UHC Treatment Standard	UHC	0.055	8.2	1 mg/L detection limit exceeds the wastewater treatment standard.
Dibenzofuran	U (1)	None	NA	NA	NA	
1,2-Dichlorobenzene (o-dichlorobenzene)	U (1)	UHC Treatment Standard	UHC	0.088	6	1 mg/L detection limit exceeds the wastewater treatment standard.
1,3-Dichlorobenzene (m-dichlorobenzene)	U (1)	UHC Treatment Standard	UHC	0.036	6	1 mg/L detection limit exceeds the wastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value

INEEL V-1 SVOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
1,4-Dichlorobenzene (p-dichlorobenzene)	U (1)	7.5 (D027), UHC Treatment Standard	D027, UHC	0.09	6	1 mg/L detection limit exceeds the wastewater treatment standard.
3,3-Dichlorobenzidine (Dibenz (a,h) anthracene)	U (1)	UHC Treatment Standard	UHC	0.055	8.2	1 mg/L detection limit exceeds the wastewater treatment standard.
2,4-Dichlorophenol	U (1)	UHC Treatment Standard	UHC	0.044	14	1 mg/L detection limit exceeds the wastewater treatment standard.
Diethylphthalate	U (1)	UHC Treatment Standard	UHC	0.2	28	1 mg/L detection limit exceeds the wastewater treatment standard.
2,4-Dimethylphenol	U (1)	UHC Treatment Standard	UHC	0.036	14	1 mg/L detection limit exceeds the wastewater treatment standard.
Dimethylphthalate	U (1)	UHC Treatment Standard	UHC	0.047	28	1 mg/L detection limit exceeds the wastewater treatment standard.
Di-n-butylphthalate	U (1)	UHC Treatment Standard	UHC	0.057	28	1 mg/L detection limit exceeds the wastewater treatment standard.
Di-n-octylphthalate	U (1)	UHC Treatment Standard	UHC	0.017	28	1 mg/L detection limit exceeds the wastewater treatment standard.
4,6-Dinitro-2-methylphenol	U (5)	None	NA	NA	NA	
2,4-Dinitrophenol	U (5)	UHC Treatment Standard	UHC	0.12	160	5 mg/L detection limit exceeds the wastewater treatment standard.
2,4-Dinitrotoluene	U (1)	UHC Treatment Standard	UHC	0.32	140	1 mg/L detection limit exceeds the wastewater treatment standard.
2,6-Dinitrotoluene	U (1)	UHC Treatment Standard	UHC	0.55	28	1 mg/L detection limit exceeds the wastewater treatment standard.
Fluoranthene	U (1)	UHC Treatment Standard	UHC	0.068	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value

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INEEL V-1 SVOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Fluorene	U (1)	UHC Treatment Standard	UHC	0.059	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Hexachlorobenzene	U (1)	0.13 (D032), UHC Treatment Standard	D032, UHC	0.055	10	1 mg/L detection limit exceeds the characteristic limit and the wastewater treatment standard.
Hexachlorobutadiene (Hexachloro-1,3-butadiene	U (1)	0.5 (D033)UHC Treatment Standard	D033, UHC	0.055	5.6	1 mg/L detection limit exceeds the characteristic limit and the wastewater treatment standard.
Hexachlorocyclopentadiene	U (1)	UHC Treatment Standard	UHC	0.057	2.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Hexachloroethane	U (1)	UHC Treatment Standard	UHC	0.055	30	1 mg/L detection limit exceeds the wastewater treatment standard.
Indeno (1,2,3-cd) pyrene	U (1)	UHC Treatment Standard	UHC	0.0055	3.4	1 mg/L detection limit exceeds the wastewater treatment standard.
Isophorone	U (1)	None	NA	NA	NA	
2-Methylnaphthalene	U (1)	None	NA	NA	NA	
2-Methylphenol (o-cresol)	U (1)	200 mg/L, UHC Treatment Standard	D023, UHC	0.11	5.6	1 mg/L detection limit is below the characteristic, but exceeds the wastewater treatment standard.
4-Methylphenol (p-cresol)	U (1)	200 mg/L, UHC Treatment Standard	D025, UHC	0.77	5.6	Waste is below the characteristic limit, but exceeds the ww treatment standard.
Naphthalene	U (1)	UHC Treatment Standard	UHC	0.059	5.6	1 mg/L detection limit exceeds the wastewater treatment standard.
2-Nitroaniline (o-nitroaniline)	U (5)	UHC Treatment Standard	UHC	0.27	14	5 mg/L detection limit exceeds the wastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value

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INEEL V-1 SVOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
3-Nitroaniline (m-nitroaniline)	U (5)	None	NA	NA	NA	
4-Nitroaniline (p-nitroaniline)	U (5)	UHC Treatment Standard	UHC	0.028	28	5 mg/L detection limit exceeds the wastewater treatment standard.
Nitrobenzene	U (1)	2.0 (D036) or UHC Treatment Standard	D036 or UHC	0.068	14	Waste is below the characteristic limit, but exceeds the ww treatment standard.
2-Nitrophenol (o-nitrophenol)	U (1)	UHC Treatment Standard	UHC	0.028	13	1 mg/L detection limit exceeds the wastewater treatment standard.
4-Nitrophenol (p-nitrophenol)	U (5)	UHC Treatment Standard	UHC	0.12	29	5 mg/L detection limit exceeds the wastewater treatment standard.
N-nitroso-di-n-propylamine (Di-n-propylnitrosamine)	U (1)	UHC Treatment Standard	UHC	0.4	14	1 mg/L detection limit exceeds the wastewater treatment standard.
N-nitrosodiphenylamine (Diphenylnitrosamine)	U (1)	UHC Treatment Standard	UHC	0.92	13	1 mg/L detection limit exceeds the wastewater treatment standard.
Pentachlorophenol	U (5)	UHC Treatment Standard	UHC	0.089	7.4	5 mg/L detection limit exceeds the wastewater treatment standard.
Phenanthrene	U (1)	UHC Treatment Standard	UHC	0.059	5.6	1 mg/L detection limit exceeds the wastewater treatment standard.
Phenol	U (1)	UHC Treatment Standard	UHC	0.039	6.2	1 mg/L detection limit exceeds the wastewater treatment standard.
Pyrene	U (1)	UHC Treatment Standard	UHC	0.067	8.2	1 mg/L detection limit exceeds the wastewater treatment standard.
Pyridine	U (1)	5.0 (D038) or UHC Treatment Standard	D038 or UHC	0.014	16	Waste is below the characteristic limit, but exceeds the ww treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value

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INEEL V-1 SVOC Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
1,2,4-Trichlorobenzene	U (1)	UHC Treatment Standard	UHC	0.055	19	1 mg/L detection limit exceeds the wastewater treatment standard.
2,4,5-Trichorophenol	U (5)	400 (D041), UHC Treatment Standard	D041, UHC	0.18	7.4	Waste is below the characteristic limit, but exceeds the ww treatment standard.
2,4,6-Trichlorophenol	U (1)	2 (D042), UHC Treatment Standard	D042, UHC	0.035	7.4	Waste is below the characteristic limit, but exceeds the ww treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value

INEEL V-1 Inorganic Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Aluminum	3.1 J	NA	NA	NA	NA	
Antimony	**0.236 R**	**UHC Treatment Standard**	**UHC**	**1.9**	**1.15 mg/L TCLP**	**This detected concentration was rejected. Therefore, waste must be re-analyzed to determine concentration.**
Arsenic	0.013	5.0 (D004), UHC Treatment Standard	D004, UHC	1.4	5.0 mg/L TCLP	Below characteristic limit as well as wastewater treatment standard.
Barium	U (0.25)	100 mg/l (D005), UHC Treatment Standard	D005, UHC	1.2	21 mg/L TCLP	
Beryllium	U (0.01)	UHC Treatment Standard	UHC	0.82	1.22 mg/L TCLP	Concentration is below both treatment standards.
Boron	53.3	NA	NA	NA	NA	
Cadmium	0.05	1.0 (D006), UHC	D006, UHC	0.69	0.11 mg/L TCLP	Below characteristic limit as well as wastewater treatment standard.
Calcium	47.6 J	NA	NA	NA	NA	
Chromium	0.398	5 (D007), UHC Treatment Standards	D007, UHC	2.77	0.60 mg/L TCLP	Below characteristic limit as well as wastewater treatment standard.
Cobalt	U (0.043) B	NA	NA	NA	NA	
Copper	0.25	NA	NA	NA	NA	
Iron	12 E	NA	NA	NA	NA	
Lead	**0.84 J**	**5.0 (D008), UHC Treatment Standard**	**D008, UHC**	**0.69**	**0.75 mg/L TCLP**	**Concentration is below the characteristic limit, but exceeds the wastewater treatment standard. Therefore, it is a UHC.**

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
B = Reported value is > to instrument detection limit but < contract required detection limit.
R = Result rejected during data validation and unusable.

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INEEL V-1 Inorganic Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Magnesium	23.1	NA	NA	NA	NA	
Manganese	2.78	NA	NA	NA	NA	
Mercury	**0.369**	**0.2 (D009), UHC Treatment Standard**	**D009, UHC**	**0.15**	**0.025 mg/L TCLP**	**Mercury exceeds the characteristic level and exceeds the ww treatment standard.**
Nickel	0.529	UHC Treatment Standard	UHC	3.98	11 mg/L TCLP	Concentration is below the treatment standard limit.
Potassium	104	NA	NA	NA	NA	
Selenium	U (0.005)	1 (D010)	D010	0.82	5.7 mg/L TCLP	
Silica	16.6 J	NA	NA	NA	NA	
Silver	0.059	5 (D011), UHC Treatment Standard	D011, UHC	0.43	0.14 mg/L TCLP	Concentration is below the characteristic limit and below the treatment standard limit.
Sodium	588	NA	NA	NA	NA	
Thallium	U (0.005) B	UHC Treatment Standard	UHC	1.4	0.2 mg/L TCLP	
Vanadium	U (0.06)	NA	NA	NA	NA	
Zinc	60.3	NA	NA	NA	NA	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
B = Reported value is > to instrument detection limit but < contract required detection limit.
R = Result rejected during data validation and unusable.

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INEEL V-1 Miscellaneous Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Bromide	5.67	None	NA	NA	NA	
Chloride	240	None	NA	NA	NA	
Fluoride	U (5)	None	NA	NA	NA	
Nitrate	U (2)	None	NA	NA	NA	
Nitrite	U (4)	None	NA	NA	NA	
Phosphate	1.2	None	NA	NA	NA	
Sulfate	12.8	None	NA	NA	NA	
Total Organic Carbon	65.9	< 1%	NA	NA	NA	Wastewater is defined as < 1% TOC and < 1% TSS.
Total Halides	183	NA	NA	NA	NA	
Total Suspended Solids	8	<1%	NA	NA	NA	Wastewater is defined as < 1% TOC and < 1% TSS.
Oil & Grease	4.17	None	NA	NA	NA	

U = Not Detected (Detection limit in parenthesis).
TOC = 65.9 mg/L = 6.59E-3 %, which is < 1%.TSS = 8 mg/L = 8.0 E-4% which is < 1%. Therefore, liquid phase is considered a wastewater.

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INEEL V-1 PCB Analysis on liquid phase.

Constituents	Concentration mg/L	Applicable Regulatory Limit	Applicable TSCA/RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Aroclor-1016	U (0.1)		None	NA	NA	
Aroclor-1221	U (0.2)	NA	NA	NA	NA	
Aroclor-1232	U (0.1)	NA	NA	NA	NA	
Aroclor-1242	U (0.1)	NA	NA	NA	NA	
Aroclor-1248	U (0.1)	NA	NA	NA	NA	
Aroclor-1254	U (0.1)	NA	NA	NA	NA	
Aroclor-1260	U (0.1)	NA	NA	NA	NA	
Total Concentration	U (0.1)	50 mg/kg for TSCA, UHC Treatment Standard for RCRA	None	0.1	10	This waste is not regulated under TSCA and it is below the UHC treatment standard level. Therefore, no PCB treatment is required prior to disposal.

U = Not Detected (Detection limit in parenthesis).

INEEL OU 1-10 Site TSF-09, Tank V-1
Preliminary Sludge Chemical Characterization Summary

- The sludge phase of the waste associated with this tank is considered a non-wastewater for purposes of complying with the Land Disposal Restrictions. This determination as well as the hazardous waste determination listed below is preliminary based on existing analytical data associated with this waste.

- **Hazardous Waste Determination:** Highest concentrations detected in the waste are reported.

The RCRA Waste codes that apply to this waste are as follows:

Constituent	Concentration Detected in Waste (mg/kg)	Regulatory Limit (mg/L)	Applicable Waste Code	LDR Treatment Standard for non-wastewater (mg/kg)
Antimony	1.53 mg/L (theoretical)	1.15	UHC	1.15 mg/L
Beryllium	4.56 mg/L (theoretical)	1.22	UHC	1.22 mg/L
Cadmium	0.331 mg/L	1.0 (0.11 as a UHC)	UHC	0.11 mg/L
Nickel	26.7 mg/L (theoretical)	11	UHC	11 mg/L
Bis(2-ethyl hexyl) phthalate	U (1100) E	28 mg/kg as a UHC	UHC	28
Hexachlorobenzene	ND @ 76 or 3.8 mg/L (theoretical)	0.13	D032	10
Hexachloro-butadiene	ND @ 76 or 3.8 mg/L (theoretical)	0.5	D033	5.6
Nitrobenzene	ND @ 76 or 3.8 mg/L (theoretical)	2.0	D036	14
Tetrachloroethene	1800 (TCLP 18.7 mg/L D)	0.7 mg/L as a D039, None if F-listed, or 6 as a UHC	D039	6
2,4,6-Trichloro-phenol	ND @ 76 or 3.8 mg/L (theoretical)	2.0	D042	7.4
Trichloroethene	23J (TCLP 3.7 mg/L D)	0.5 mg/L as a D040, None if F-listed, or 6 as a UHC	F001	6
Total PCB Concentration	660 D	50 mg/kg for TSCA and UHC Treatment Standard for RCRA	TSCA Regulated and UHC	< 50 for TSCA and10 for RCRA

Note: SVOCs are also identified to be present as UHCs. See write-up below.

- **UHC** = Underlying Hazardous Constituent.
  U = Not Detected (Detection limit in parenthesis)
  D = Dilution factor of 50 (except for PCB analysis, dilution factor is 20).
  J = Estimated Value.
  ND = Not Detected

- The inorganic analysis performed on the sludge phase of this waste was reported in a total concentration (mg/kg) and in a TCLP extract concentration (mg/L). Although high total concentrations are reported in this waste, the TCLP extract concentrations are typically below the regulatory limits as a characteristic waste. For the other inorganic analyses identified as UHCs, only total concentrations are reported. Therefore, to evaluate the regulatory status of these constituents in this solid, the total constituent concentration is divided by 20, creating the maximum theoretical leachate concentration (as referenced in the table above), which is then compared to the applicable regulatory limit. The division factor reflects the 20-to-1 ratio of extraction fluid to solid used in the TCLP test method.

- Methylene chloride was detected in this waste at a concentration of 2.7 mg/kg, however this result was flagged indicating that this constituent was also detected in the blank. In addition, this reported concentration is below the non-wastewater treatment standard for methylene chloride. Since this constituent was detected in the blank, is considered a common laboratory contaminant, and was detected below the non-wastewater treatment standard, this constituent is not reported to be present within this phase of the waste.

- The detection limits for a majority of the SVOCs were above the non-wastewater treatment standards, as well as the characteristic limits for several constituents. LDR guidance suggests that in cases where detection limits are above either the characteristic limit or treatment standards, the generator may use his knowledge of the waste, in lieu of analytical results, to certify that these constituents are not present in the waste. However, since this waste will not be re-analyzed for these constituents, the following SVOCs are also assumed to be present in the waste at the detection limit value (see attached tables for concentrations) and are identified as underlying hazardous constituents (The table above identifies only those SVOCs with detection limits exceeding the characteristic limit): Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,I)perylene, Benzo(k)fluoranthene, Butylbenzylphthalate, Bis (2-chloroethoxy) methane, Bis (2-chloroethyl) ether, Bis (2-chloroisopropyl) ether, 4-Bromophenyl-phenylether, Chrysene, 4-Chloroaniline, 4-Chloro-3-Methylphenol, 2-Chloronaphthalene, 2-Chlorophenol, Dibenz(a,h)anthracene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 3,3-Dichlorobenzidine, 2,4-Dichlorophenol, Diethylphthalate, 2,4-Dimethylphthalate, Dimethylphthalate, Di-n-butylphthalate, Di-n-octylphthalate, 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Fluoranthene, Fluorene, , Hexachlorocyclopentadiene, Hexachloroethane, Indeno(1,2,3-cd)pyrene, 2-Methylphenol, 4-Methylphenol, Napthalene, 2-Nitroaniline, 4-Nitroaniline, 2-Nitrophenol, 4-Nitrophenol, N-nitroso-dimethylamine, N-nitroso-di-n-propylamine, N-nitrosodiphenylamine, Pentachlorophenol, Phenanthrene, Phenol, Pyrene, Pyridine, 1,2,4-Trichlorobenzene, and 2,4,5-Trichlorophenol.

- Based on a review of the analytical data provided by INEEL, this waste is considered both a characteristic, with underlying hazardous constituents and a listed hazardous waste, as well as TSCA regulated due to the presence of PCBs > 50 ppm. This waste

requires incineration based on 40 CFR 761 for the presence of PCBs and any form of thermal treatment for the presence of the organic constituents, followed-by stabilization of the ash for the inorganic constituents. Stabilization is only for the inorganic constituents determined to be UHCs.

- **Recommendation:**

  Since this waste will require some form of thermal treatment due to the presence of organics, the waste acceptance criteria of possible treatment facilities should also be considered.

INEEL V-1 VOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Acetone	U (0.91-10)	Treatment standard limit if UHC	UHC	0.28	160	
Benzene	U (0.91-10) TCLP result is U (0.5 mg/L)D	0.5 mg/l (D018) or treatment standard limit if UHC	D018 or UHC	0.14	10	The detection limit is below the characteristic limit as well as the non-wastewater treatment standard. Waste may still be F-listed but no treatment is required.
Bromodichloromethane	U (0.91-10)	Treatment standard limit if UHC	UHC	0.35	15	
Bromoform (Tribromomethane)	U (0.91-10)	NA	NA	NA	NA	
Bromomethane	U (0.91-10)	Treatment standard limit if UHC	UHC	0.11	15	
2-Butanone (MEK)	U (0.91-10) TCLP result is U (0.5 mg/L)D	200 mg/l (D035) or treatment standard limit if UHC	D035 or UHC	0.28	36	
Carbon disulfide	U (0.91-10)	Treatment standard limit if UHC	UHC	3.8	4.8 mg/l	

ND = Not Detected (Has a dilution factor of 1000).
B = Blank Contamination
J = Estimated Value
D = Dilution factor of 50.

INEEL V-1 VOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Carbon tetrachloride	U (0.91-10) TCLP result is U (0.5 mg/L)D	0.5 mg/L (D019) or treatment standard limit if UHC	D019 or UHC	0.057	6	
Chlorobenzene	U (0.91-10) TCLP result is U (0.5 mg/L)D	100 mg/l (D021) or treatment standard limit if UHC	D021 or UHC	0.057	6	
Chloroethane	U (10)	Treatment standard limit if UHC	UHC	0.27	6	
Chloroform	U (0.91-10) TCLP result is U (0.5 mg/L)D	6 mg/l (D022) or treatment standard limit if UHC	D022 or UHC	0.046	6	
Chloromethane	U (0.91-10)	Treatment standard limit if UHC	UHC	0.19	30	
Dibromochloromethane (Chlorodibromomethane)	U (0.91-10)	Treatment standard limit if UHC	UHC	0.057	15	
1,1-Dichloroethane	U (0.91-10)	Treatment standard limit if UHC	UHC	0.059	6	

ND = Not Detected (Has a dilution factor of 1000).
B = Blank Contamination
J = Estimated Value
D = Dilution factor of 50.

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INEEL V-1 VOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
1,2-Dichloroethane	U (0.91-10) TCLP result is U (0.5 mg/L)D	0.5 mg/l (D028), or treatment standard limit if UHC	D028 or UHC	0.21	6	
1,1-Dichloroethene	U (0.91-10) TCLP result is U (0.5 mg/L)D	0.7 mg/l (D029) or treatment standard limit if UHC	D029 or UHC	0.025	6	
1,2-Dichloroethene (cis-Dichloroethene)	U (10)	NA	NA	NA	NA	
trans-1,2-Dichloroethene	U (0.91-10)	Treatment standard limit if UHC	UHC	0.054	30	
1,2-Dichloropropane	U (0.91-10)	Treatment standard limit if UHC	UHC	0.85	18	
cis-1,3-Dichloropropene	U (0.91-10)	Treatment standard limit if UHC	UHC	0.036	18	
trans-1,3-Dichloropropene	U (0.91-10)	Treatment standard limit if UHC	UHC	0.036	18	
Ethylbenzene	U (0.91-10)	Treatment standard limit if UHC	UHC	0.057	10	

ND = Not Detected (Has a dilution factor of 1000).
B = Blank Contamination
J = Estimated Value
D = Dilution factor of 50.

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INEEL V-1 VOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
2-Hexanone (Methyl n-butyl ketone)	U (0.91-10)	NA	NA	NA	NA	
4-Methyl-2-pentanone (MIK)	U (0.91-10)	Treatment standard limit if UHC	UHC	0.14	33	
Methylene chloride	2.7B	Treatment standard limit if UHC	UHC	0.089	30	
Styrene	U (0.91-10)	NA	NA	NA	NA	
1,1,2,2-Tetrachloroethane	U (0.91-10)	Treatment standard limit if UHC	UHC	0.057	6	
Tetrachloroethene	**1800 in sediment phase & 6.0 in a well mixed sample of both liquid and solids TCLP is 18.7 mg/L D**	**0.7 mg/l (D039) or treatment standard limit if UHC**	**D039 or UHC**	**0.056**	**6**	**Using 18.7 mg/L TCLP result, waste exceeds the characteristic limit. Using 1800 mg/kg this waste exceeds the non-wastewater treatment standards.**
Toluene	U (0.91-10)	Treatment standard limit if UHC	UHC	0.08	10	

ND = Not Detected (Has a dilution factor of 1000).
B = Blank Contamination
J = Estimated Value
D = Dilution factor of 50.

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INEEL V-1 VOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
1,1,2-Trichloroethane	U (0.91-10)	Treatment standard limit if UHC	UHC	0.054	6	
Trichloroethene	**23J in sediment phase & U (10) in a well mixed sample of both liquid and solids. TCLP Is 3.7 mg/L D**	**None if listed**	**F001**	**0.054**	**6**	**The TCLP result exceeds the characteristic limit. Using 23 mg/kg exceeds the nww treatment standard.**
Vinyl chloride	U (0.91-10) TCLP result is U (0.5 mg/L)D	0.2 mg/l (D043), orTreatment standard limit if UHC	D043 or UHC	0.27	6	The TCLP detection limit exceeds the characteristic limit. However, waste meets nww treatment standard. May still be F-listed but no treatment is required.
Xylene (ortho)	U (0.91-10)	NA	NA	NA	NA	
Xylene (total meta and para)	U (0.91-10)	Treatment standard limit if UHC	UHC	0.32	30	

ND = Not Detected (Has a dilution factor of 1000).
B = Blank Contamination
J = Estimated Value
D = Dilution factor of 50.

INEEL V-1 SVOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Acenaphthene	U (76)	UHC Treatment Standard	UHC	0.059	3.4	Detection Limit is above the nonwastewater treatment standard.
Acenaphthylene	U (76)	UHC Treatment Standard	UHC	0.059	3.4	Detection Limit is above the nonwastewater treatment standard.
Anthracene	U (76)	UHC Treatment Standard	UHC	0.059	3.4	Detection Limit is above the nonwastewater treatment standard.
Benzo (a) anthracene	U (76)	UHC Treatment Standard	UHC	0.059	3.4	Detection Limit is above the nonwastewater treatment standard.
Benzo (a) pyrene	U (76)	UHC Treatment Standard	UHC	0.061	3.4	Detection Limit is above the nonwastewater treatment standard.
Benzo (b) fluoranthene	U (76)	UHC Treatment Standard	UHC	0.11	6.8	Detection Limit is above the nonwastewater treatment standard.
Benzo (g,h,I) perylene	U (76)	UHC Treatment Standard	UHC	0.0055	1.8	Detection Limit is above the nonwastewater treatment standard.
Benzo (k) fluoranthene	U (76)	UHC Treatment Standard	UHC	0.11	6.8	Detection Limit is above the nonwastewater treatment standard.
Benzoic acid	U (380)	None	NA	NA	NA	
Benzyl alcohol	U (76)	None	NA	NA	NA	
Butylbenzylphthalate	U (76)	UHC Treatment Standard	UHC	0.017	28	Detection Limit is above the nonwastewater treatment standard.
Bis (2-chloroethoxy)methane	U (76)	UHC Treatment Standard	UHC	0.036	7.2	Detection Limit is above the nonwastewater treatment standard.
Bis (2-chloroethyl)ether	U (76)	UHC Treatment Standard	UHC	0.033	6	Detection Limit is above the nonwastewater treatment standard.
Bis (2-chloroisopropyl) ether	U (76)	UHC Treatment Standard	UHC	0.055	7.2	Detection Limit is above the nonwastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
E = Concentration exceeds the calibration range of the instrument; result from re-analysis is 17,000 mg/kg at a dilution factor of 10.

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INEEL V-1 SVOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Bis (2-ethylhexyl) phthalate	**U (1100) E**	**UHC Treatment Standard**	**UHC**	**0.28**	**28**	**Estimated concentration of 17,000 mg/kg exceeds the non-wastewater treatment standard. It is assumed to be a UHC.**
4-Bromophenyl-phenylether	U (76)	UHC Treatment Standard	UHC	0.055	15	Detection Limit is above the nonwastewater treatment standard.
Carbozole (or Carbazole)	U (76)	None	NA	NA	NA	Detection Limit is above the nonwastewater treatment standard.
Chrysene	U (76)	UHC Treatment Standard	UHC	0.059	3.4	Detection Limit is above the nonwastewater treatment standard.
4-Chloroaniline (p-chloroaniline)	U (76)	UHC Treatment Standard	UHC	0.46	16	Detection Limit is above the nonwastewater treatment standard.
4-Chloro-3-Methylphenol (p-chloro-m-cresol)	U (76)	UHC Treatment Standard	UHC	0.018	14	Detection Limit is above the nonwastewater treatment standard.
2-Chloronaphthalene	U (76)	UHC Treatment Standard	UHC	0.055	5.6	Detection Limit is above the nonwastewater treatment standard.
4-Chlorophenyl-phenylether	U (76)	None	NA	NA	NA	
2-Chlorophenol	U (76)	UHC Treatment Standard	UHC	0.044	5.7	Detection Limit is above the nonwastewater treatment standard.
Dibenz(a,h)anthracene	U (76)	UHC Treatment Standard	UHC	0.055	8.2	Detection Limit is above the nonwastewater treatment standard.
Dibenzofuran	U (76)	None	NA	NA	NA	
1,2-Dichlorobenzene (o-dichlorobenzene)	U (76)	UHC Treatment Standard	UHC	0.088	6	Waste may be F-listed and the detection limit is above the non-wastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
E = Concentration exceeds the calibration range of the instrument; result from re-analysis is 17,000 mg/kg at a dilution factor of 10.

INEEL V-1 SVOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
1,3-Dichlorobenzene (m-dichlorobenzene)	U (76)	UHC Treatment Standard	UHC	0.036	6	Detection Limit is above the nonwastewater treatment standard.
1,4-Dichlorobenzene (p-dichlorobenzene)	U (76)	7.5 mg/L (D027), UHC Treatment Standard	D027, UHC	0.09	6	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is above the characteristic limit. The detection limit is above the non-wastewater treatment standard.
3,3-Dichlorobenzidine (Dibenz (a,h) anthracene)	U (76)	UHC Treatment Standard	UHC	0.055	8.2	Detection Limit is above the nonwastewater treatment standard.
2,4-Dichlorophenol	U (76)	UHC Treatment Standard	UHC	0.044	14	Detection Limit is above the nonwastewater treatment standard.
Diethylphthalate	U (76)	UHC Treatment Standard	UHC	0.2	28	Detection Limit is above the nonwastewater treatment standard.
2,4-Dimethylphenol	U (76)	UHC Treatment Standard	UHC	0.036	14	Detection Limit is above the nonwastewater treatment standard.
Dimethylphthalate	U (76)	UHC Treatment Standard	UHC	0.047	28	Detection Limit is above the nonwastewater treatment standard.
Di-n-butylphthalate	U (76)	UHC Treatment Standard	UHC	0.057	28	Detection Limit is above the nonwastewater treatment standard.
Di-n-octylphthalate	U (76)	UHC Treatment Standard	UHC	0.017	28	Detection Limit is above the nonwastewater treatment standard.
4,6-Dinitro-2-methylphenol	U (380)	None	NA	NA	NA	
2,4-Dinitrophenol	U (380)	UHC Treatment Standard	UHC	0.12	160	Detection Limit is above the nonwastewater treatment standard.
2,4-Dinitrotoluene	U (76)	UHC Treatment Standard	UHC	0.32	140	Detection Limit is above the nonwastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
E = Concentration exceeds the calibration range of the instrument; result from re-analysis is 17,000 mg/kg at a dilution factor of 10.

INEEL V-1 SVOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
2,6-Dinitrotoluene	U (76)	UHC Treatment Standard	UHC	0.55	28	Detection Limit is above the nonwastewater treatment standard.
Fluoranthene	U (76)	UHC Treatment Standard	UHC	0.068	3.4	Detection Limit is above the nonwastewater treatment standard.
Fluorene	U (76)	UHC Treatment Standard	UHC	0.059	3.4	Detection Limit is above the nonwastewater treatment standard.
Hexachlorobenzene	U (76)	0.13 mg/L (D032), UHC Treatment Standard	D032, UHC	0.055	10	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is above the characteristic limit. The detection limit is above the non-wastewater treatment standard.
Hexachlorobutadiene (Hexachloro-1,3-butadiene	U (76)	0.5 mg/L (D033) UHC Treatment Standard	D033, UHC	0.055	5.6	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is above the characteristic limit. The detection limit is above the non-wastewater treatment standard.
Hexachlorocyclopentadiene	U (76)	UHC Treatment Standard	UHC	0.057	2.4	Detection Limit is above the nonwastewater treatment standard.
Hexachloroethane	U (76)	UHC Treatment Standard	UHC	0.055	30	Detection Limit is above the nonwastewater treatment standard.
Indeno (1,2,3-cd) pyrene	U (76)	UHC Treatment Standard	UHC	0.0055	3.4	Detection Limit is above the nonwastewater treatment standard.
Isophorone	U (76)	None	NA	NA	NA	
2-Methylnaphthalene	26 J	None	NA	NA	NA	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
E = Concentration exceeds the calibration range of the instrument; result from re-analysis is 17,000 mg/kg at a dilution factor of 10.

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INEEL V-1 SVOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
2-Methylphenol (o-cresol)	U (76)	200 mg/L (D023) UHC Treatment Standard	D023, UHC	0.11	5.6	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is below the characteristic limit. However, the detection limit is above the non-wastewater treatment standard.
4-Methylphenol (p-cresol)	U (76)	200 mg/L (D025) UHC Treatment Standard	D025, UHC	0.77	5.6	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is below the characteristic limit. However, the detection limit is above the non-wastewater treatment standard.
Naphthalene	U (76)	UHC Treatment Standard	UHC	0.059	5.6	Detection Limit is above the nonwastewater treatment standard.
2-Nitroaniline (o-nitroaniline)	U (380)	UHC Treatment Standard	UHC	0.27	14	Detection Limit is above the nonwastewater treatment standard.
3-Nitroaniline (m-nitroaniline)	U(380)	None	NA	NA	NA	Detection Limit is above the nonwastewater treatment standard.
4-Nitroaniline (p-nitroaniline)	U (380)	UHC Treatment Standard	UHC	0.028	28	Detection Limit is above the nonwastewater treatment standard.
Nitrobenzene	U (76)	2.0 mg/L (D036) or UHC Treatment Standard	D036 orUHC	0.068	14	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is above the characteristic limit. The detection limit is above the non-wastewater treatment standard.
2-Nitrophenol (o-nitrophenol)	U (76)	UHC Treatment Standard	UHC	0.028	13	Detection Limit is above the nonwastewater treatment standard.
4-Nitrophenol (p-nitrophenol)	U (380)	UHC Treatment Standard	UHC	0.12	29	Detection Limit is above the nonwastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).

J = Estimated Value

E = Concentration exceeds the calibration range of the instrument; result from re-analysis is 17,000 mg/kg at a dilution factor of 10.

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INEEL V-1 SVOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
N-nitroso-dimethylamine	NA	UHC Treatment Standard	UHC	0.4	2.3	Detection Limit is above the nonwastewater treatment standard.
N-nitroso-di-n-propylamine (Di-n-propylnitrosamine)	U (76)	UHC Treatment Standard	UHC	0.4	14	Detection Limit is above the nonwastewater treatment standard.
N-nitrosodiphenylamine (Diphenylnitrosamine)	U (76)	UHC Treatment Standard	UHC	0.92	13	Detection Limit is above the nonwastewater treatment standard.
Pentachlorophenol	U (380)	UHC Treatment Standard	UHC	0.089	7.4	Detection Limit is above the nonwastewater treatment standard.
Phenanthrene	U (76)	UHC Treatment Standard	UHC	0.059	5.6	Detection Limit is above the nonwastewater treatment standard.
Phenol	U (76)	UHC Treatment Standard	UHC	0.039	6.2	Detection Limit is above the nonwastewater treatment standard.
Pyrene	U (76)	UHC Treatment Standard	UHC	0.067	8.2	Detection Limit is above the nonwastewater treatment standard.
Pyridine	U (76)	5.0 mg/L (D038) or UHC Treatment Standard	D038 or UHC	0.014	16	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is below the characteristic limit. However, the detection limit is above the non-wastewater treatment standard.
1,2,4-Trichlorobenzene	U (76)	UHC Treatment Standard	UHC	0.055	19	Detection Limit is above the nonwastewater treatment standard.
2,4,5-Trichorophenol	U (380)	400.0 mg/L (D041), UHC Treatment Standard	D041, UHC	0.18	7.4	Using 380 mg/kg, the theoretical leachate value is 19 mg/L which is below the characteristic limit. However, the detection limit is above the non-wastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
E = Concentration exceeds the calibration range of the instrument; result from re-analysis is 17,000 mg/kg at a dilution factor of 10.

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INEEL V-1 SVOC Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/l	LDR Treatment Standard for non-wastewater in mg/kg	Comments
2,4,6-Trichlorophenol	U (76)	2.0 mg/L (D042), UHC Treatment Standard	D042, UHC	0.035	7.4	Using 76 mg/kg, the theoretical leachate value is 3.8 mg/L which is above the characteristic limit. The detection limit is above the non-wastewater treatment standard.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
E = Concentration exceeds the calibration range of the instrument; result from re-analysis is 17,000 mg/kg at a dilution factor of 10.

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INEEL V-1 Inorganic Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Aluminum	10300 D	NA	NA	NA	NA	
Antimony	**30.6 B**	**UHC Treatment Standard**	**UHC**	**1.9**	**1.15 mg/L TCLP**	**Using 30.6 mg/kg, the theoretical leachate value is 1.53 mg/L which exceeds the non-wastewater treatment standard. Therefore, it may be a UHC.**
Arsenic	18.8 , TCLP is U (0.0386 mg/L)	5.0 mg/L (D004), UHC Treatment Standard	D004, UHC	1.4	5.0 mg/L TCLP	TCLP result is below both the characteristic limit and the nww treatment standard limit.
Barium	385, TCLP is 2.32 mg/L	100 mg/L (D005), UHC Treatment Standard	D005, UHC	1.2	21 mg/L TCLP	The TCLP result is below both the characteristic limit and the nww treatment standard limit.
Beryllium	**91.2**	**UHC Treatment Standard**	**UHC**	**0.82**	**1.22 mg/L TCLP**	**Using 91.2 mg/kg, the theoretical leachate value is 4.56 mg/L which exceeds the non-wastewater treatment standard. Therefore, it may be a UHC.**
Boron	341	NA	NA	NA	NA	
Cadmium	**170, TCLP is 0.331 mg/L**	**1.0 mg/L (D006), UHC**	**D006, UHC**	**0.69**	**0.11 mg/L TCLP**	**The TCLP result is below the characteristic limit, however it exceeds the nww treatment standard limit. Therefore it may be a UHC.**
Calcium	23120 D	NA	NA	NA	NA	
Chromium	1740, TCLP is 0.301 mg/L	5 mg/L (D007), UHC Treatment Standards	D007, UHC	2.77	0.60 mg/L TCLP	The TCLP result is below both the characteristic limit and the nww treatment standard limit.

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
B = Reported value is > instrument detection limit but < contract required detection limit.
* = Duplicate analysis not within control limits.
D = Dilution factor of 10.

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INEEL V-1 Inorganic Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Cobalt	10.8	NA	NA	NA	NA	
Copper	1210	NA	NA	NA	NA	
Iron	35600	NA	NA	NA	NA	
Lead	3230, TCLP is 0.0817 mg/L	5.0 mg/L (D008), UHC Treatment Standard	D008, UHC	0.69	0.75 mg/L TCLP	The TCLP result is below both the characteristic limit and the nww treatment standard limit.
Magnesium	16100D	NA	NA	NA	NA	
Manganese	10500 D	NA	NA	NA	NA	
Mercury	890, TCLP is U (0.0001 mg/L)	0.2 mg/L (D009), UHC Treatment Standard	D009, UHC	0.15	0.025 mg/L TCLP	The TCLP result is below both the characteristic limit and the nww treatment standard limit.
Nickel	**534**	**UHC Treatment Standard**	**UHC**	**3.98**	**11 mg/L TCLP**	**Using 534 mg/kg, the theoretical leachate value is 26.7 mg/L which exceeds the non-wastewater treatment standard. Therefore, it may be a UHC.**
Potassium	7000	NA	NA	NA	NA	
Selenium	U (2.25), TCLP is U (0.0471 mg/L)	1 (D010)	D010	0.82	5.7 mg/L TCLP	The TCLP result is below both the characteristic limit and the nww treatment standard limit.
Silica	3720 J	NA	NA	NA	NA	
Silver	1000 * J, TCLP is 0.018 mg/L	5 mg/L (D011), UHC Treatment Standard	D011, UHC	0.43	0.14 mg/L TCLP	The TCLP result is below both the characteristic limit and the nww treatment standard limit.
Sodium	5610	NA	NA	NA	NA	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
B = Reported value is > instrument detection limit but < contract required detection limit.
* = Duplicate analysis not within control limits.
D = Dilution factor of 10.

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INEEL V-1 Inorganic Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Thallium	U (2.9)	UHC Treatment Standard	UHC	1.4	0.2 mg/L TCLP	Using the detection limit of 2.9 mg/kg, the theoretical leachate value is 0.15 mg/L which is below the nww treatment standard limit.
Tin	112	NA	NA	NA	NA	
Vanadium	9.11 B	NA	NA	NA	NA	
Zinc	27000 D	NA	NA	NA	NA	

U = Not Detected (Detection limit in parenthesis).
J = Estimated Value
B = Reported value is > instrument detection limit but < contract required detection limit.
* = Duplicate analysis not within control limits.
D = Dilution factor of 10.

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INEEL V-1 Miscellaneous Analysis on Solid Phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Bromide	7.25	None	NA	NA	NA	
Chloride	7.6	None	NA	NA	NA	
Fluoride	U (5)	None	NA	NA	NA	
Nitrate	U (2)	None	NA	NA	NA	
Nitrite	U (4)	None	NA	NA	NA	
Phosphate	25.4	None	NA	NA	NA	
Sulfate	2540	None	NA	NA	NA	
Total Organic Carbon	92900	< 1%	NA	NA	NA	Wastewater is defined as < 1% TOC and < 1% TSS.
Total Halides	745	NA	NA	NA	NA	
Total Suspended Solids	NA	<1%	NA	NA	NA	Wastewater is defined as < 1% TOC and < 1% TSS.
pH	7.8-8.06	≤ 2 or ≥ 12.5	None	NA	NA	
Density (total)	1.02					

U = Not Detected (Detection limit in parenthesis).
TOC = 92900 mg/kg = 9.29 %, which is > 1%. Therefore the solids are considered a non-wastewater.

INEEL V-1 PCB Analysis on solid phase.

Constituents	Concentration mg/kg	Applicable Regulatory Limit	Applicable TSCA/RCRA Waste Code	LDR Treatment Standard for wastewater in mg/L	LDR Treatment Standard for non-wastewater in mg/kg	Comments
Aroclor-1016	U (13)		None	NA	NA	
Aroclor-1221	U (25)	NA	NA	NA	NA	
Aroclor-1232	U (13)	NA	NA	NA	NA	
Aroclor-1242	U (13)	NA	NA	NA	NA	
Aroclor-1248	U (13)	NA	NA	NA	NA	
Aroclor-1254	U (13)	NA	NA	NA	NA	
Aroclor-1260	660 D	NA	NA	NA	NA	
Total Concentration	660 D	50 mg/kg for TSCA, UHC Treatment Standard for RCRA	None	0.1	10	This waste is regulated under TSCA and it may be subject to the UHC treatment standard level. Therefore, this waste must be incinerated prior to disposal for purposes of PCBs.

U = Not Detected (Detection limit in parenthesis).
D = Dilution factor of 20.

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